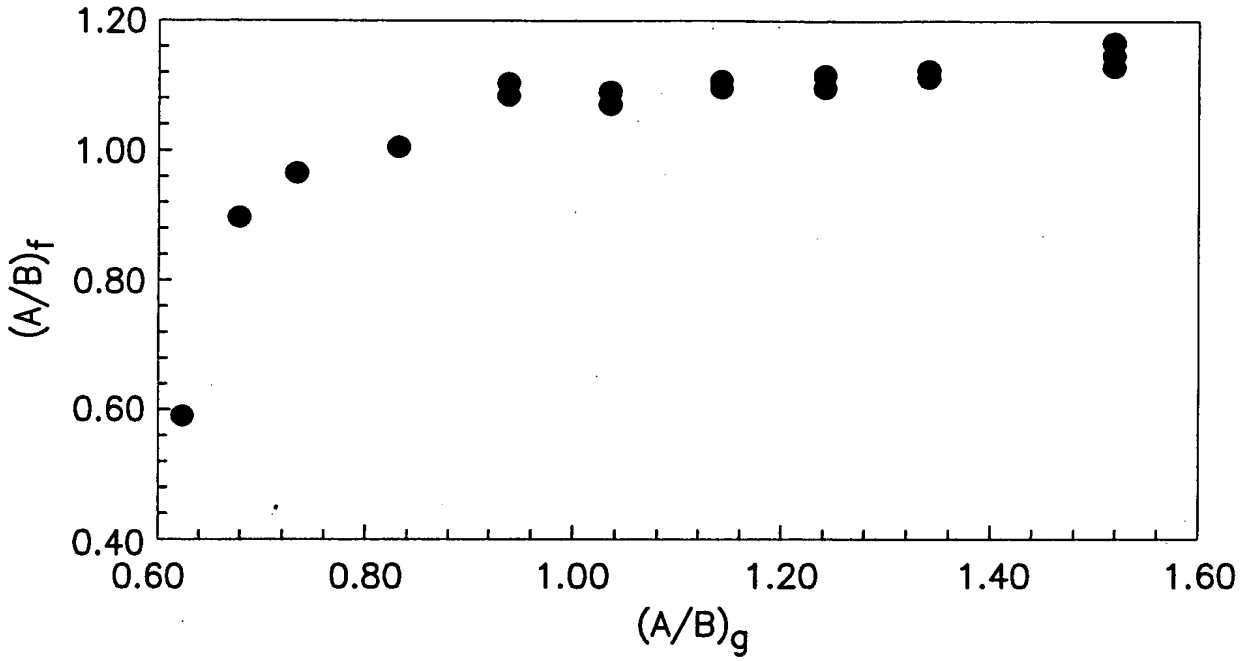
1.20
1.00
0.80
0.60
0.40
$(A/B)_f$
0.60
0.80
1.00
1.20
1.40
1.60
$(A/B)_g$

FIG.1

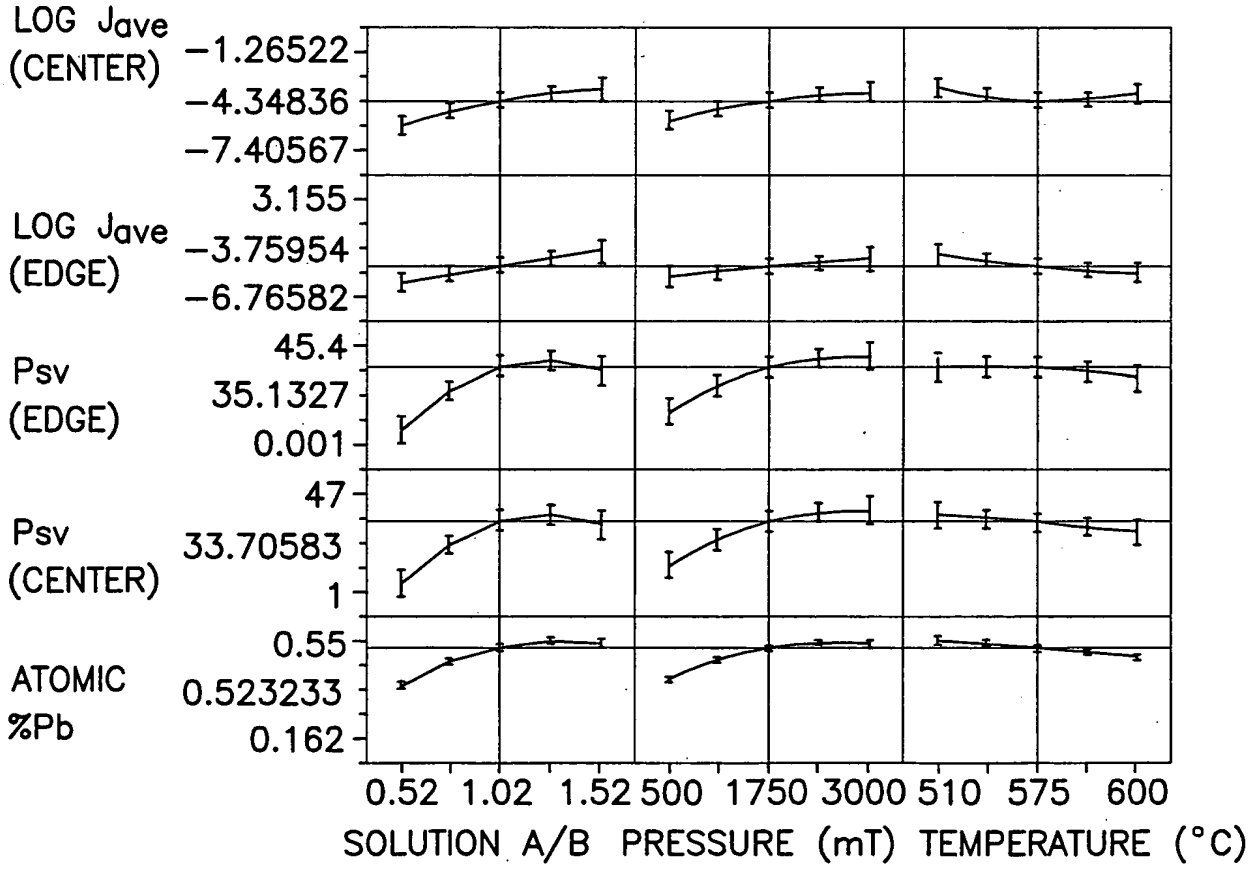
LOG Jave (CENTER)
−1.26522
−4.34836
−7.40567
LOG Jave (EDGE)
3.155
−3.75954
−6.76582
Psv (EDGE)
45.4
35.1327
0.001
Psv (CENTER)
47
33.70583
1
ATOMIC %Pb
0.55
0.523233
0.162
0.52 1.02 1.52 500 1750 3000 510 575 600
SOLUTION A/B PRESSURE (mT) TEMPERATURE (°C)

FIG.2

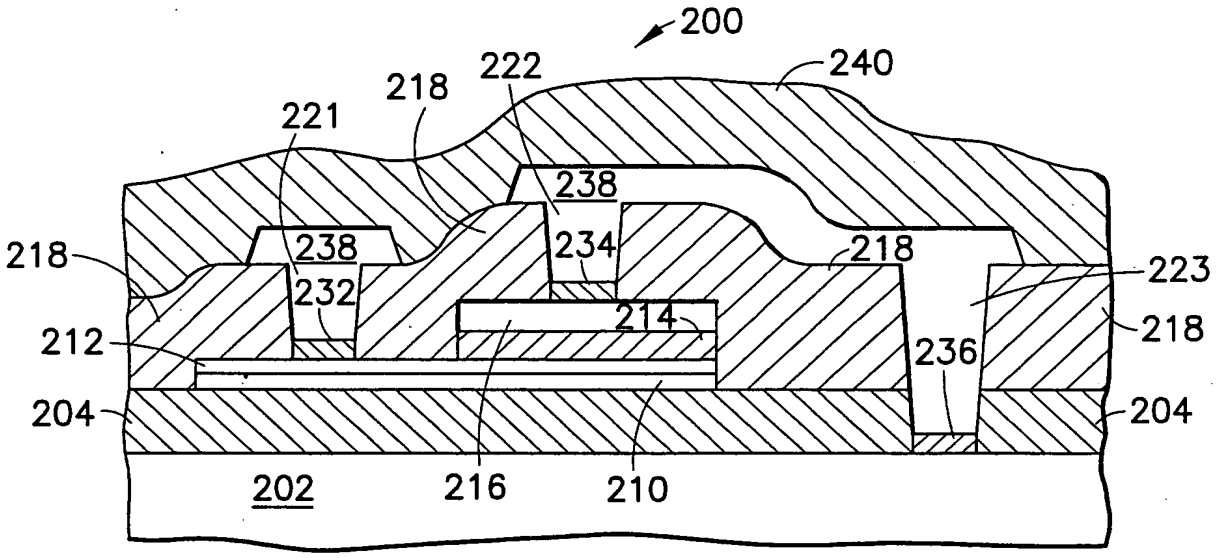
200
240
222
218
221
238
218
238
234
218
223
232
214
212
218
236
204
204
202
216
210

FIG.3

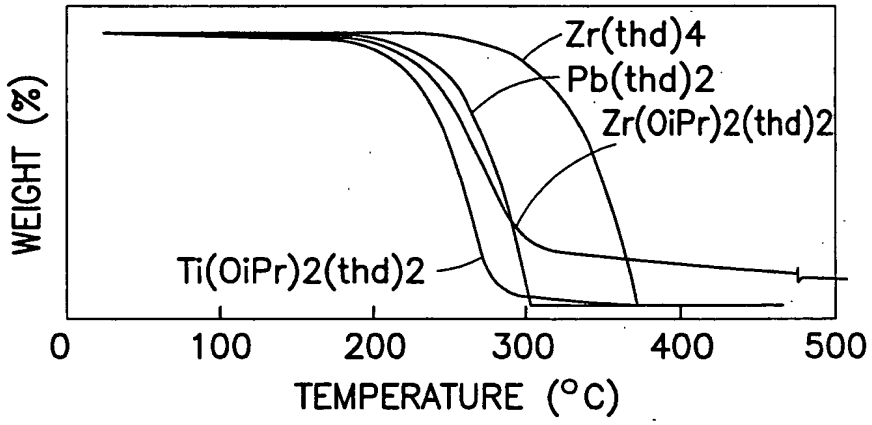
Zr(thd)4
Pb(thd)2
Zr(OiPr)2(thd)2
Ti(OiPr)2(thd)2
WEIGHT (%)
0
100
200
300
400
500
TEMPERATURE (°C)

FIG.4

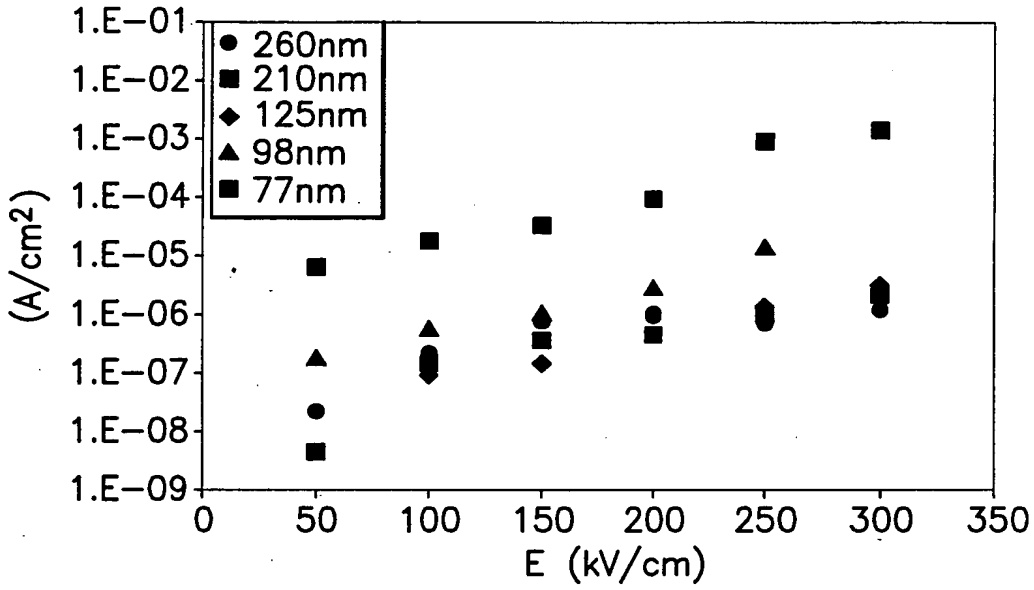
1.E−01
1.E−02
1.E−03
1.E−04
1.E−05
1.E−06
1.E−07
1.E−08
1.E−09
(A/cm²)
260nm
210nm
125nm
98nm
77nm
0
50
100
150
200
250
300
350
E (kV/cm)

FIG.5

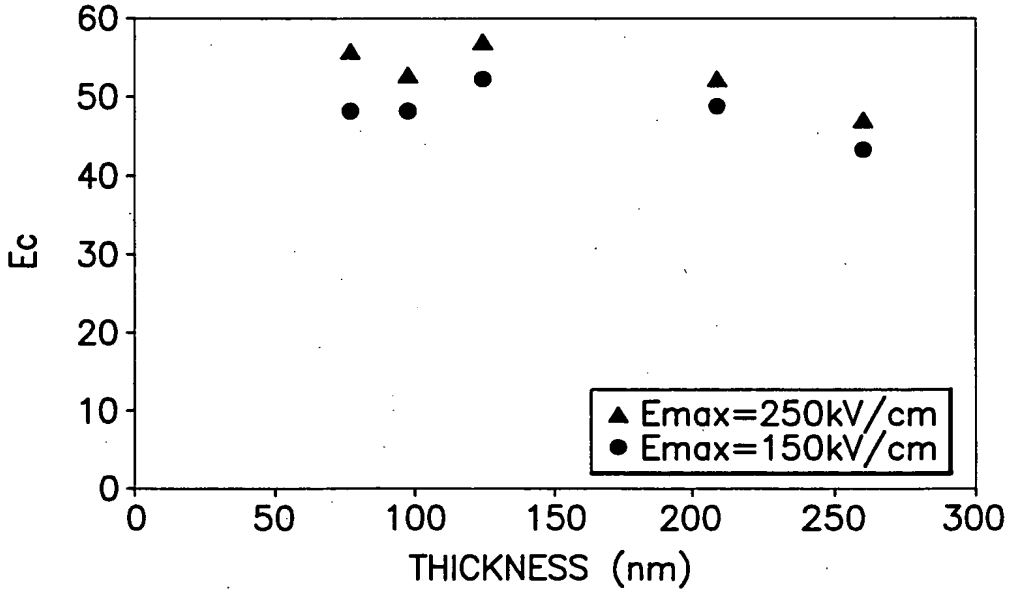
60
50
40
30
20
10
0
Ec
Emax=250kV/cm
Emax=150kV/cm
0
50
100
150
200
250
300
THICKNESS (nm)

FIG.6

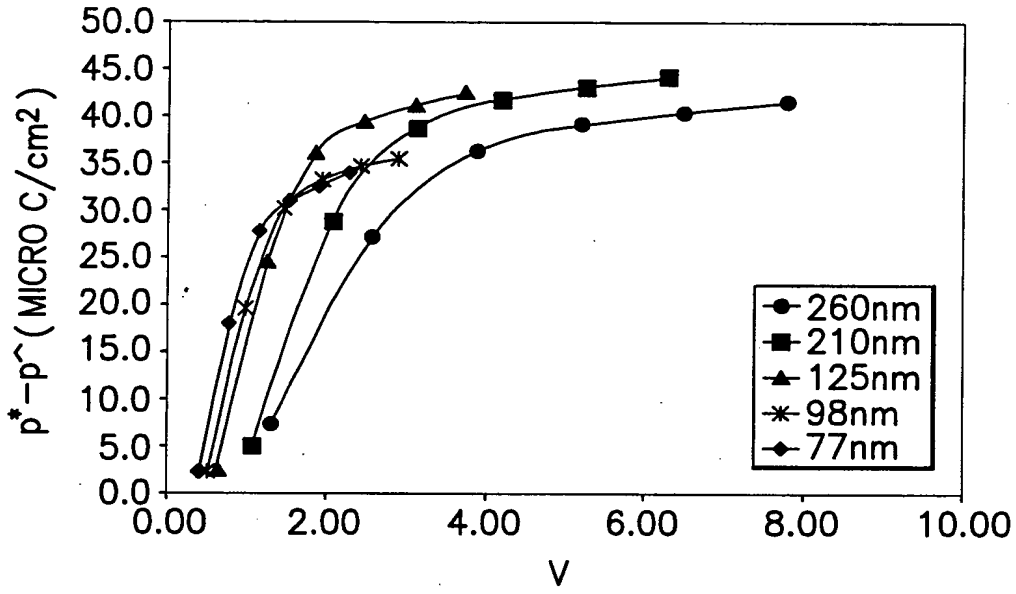
50.0
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
p*-p^(MICRO C/cm²)
0.00
2.00
4.00
6.00
8.00
10.00
V
260nm
210nm
125nm
98nm
77nm

FIG.7a

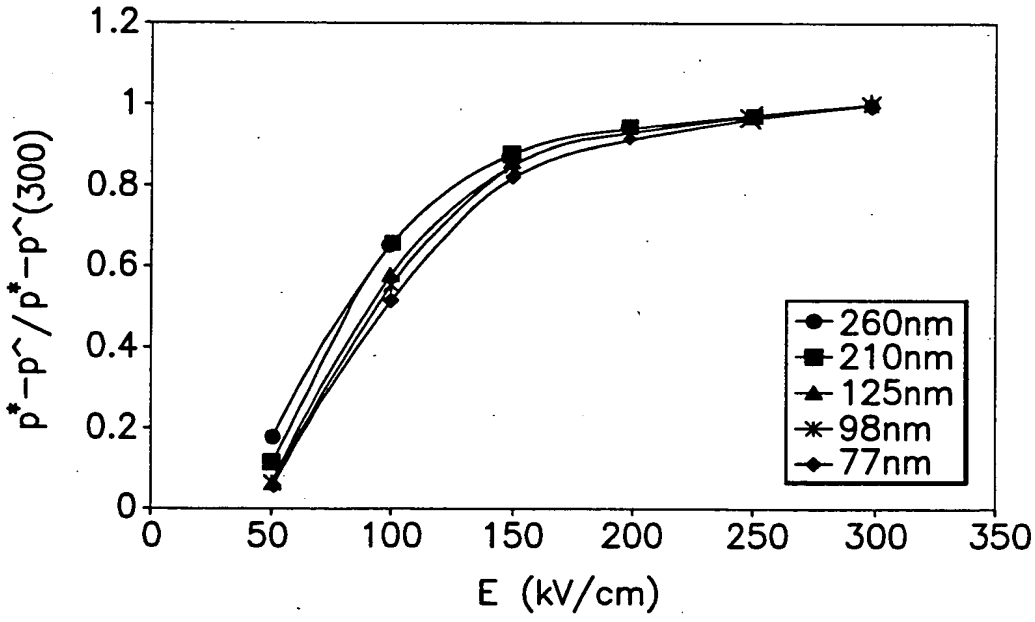
1.2
1
0.8
0.6
0.4
0.2
0
p*-p^/p*-p^(300)
0
50
100
150
200
250
300
350
E (kV/cm)
260nm
210nm
125nm
98nm
77nm

FIG.7b

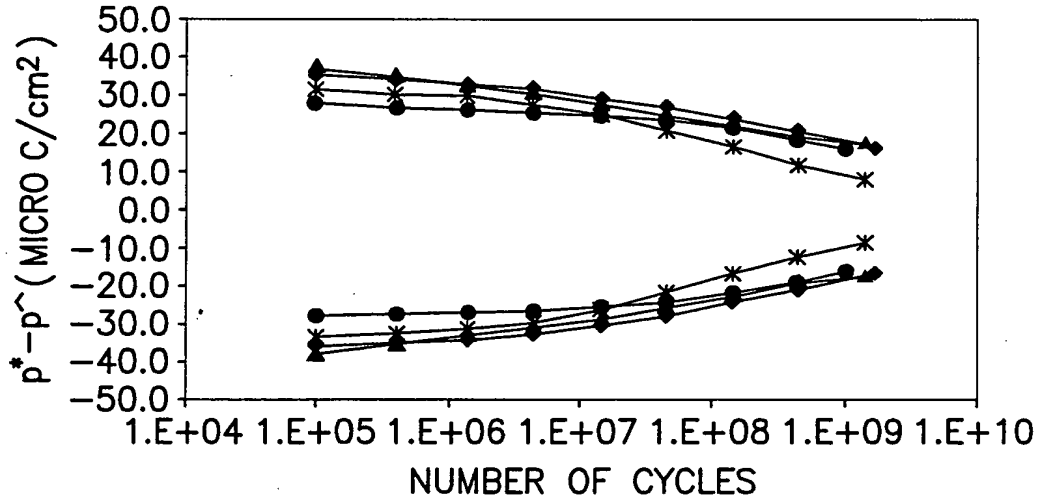
50.0
40.0
30.0
20.0
10.0
0.0
−10.0
−20.0
−30.0
−40.0
−50.0
p*−p^ (MICRO C/cm²)
1.E+04 1.E+05 1.E+06 1.E+07 1.E+08 1.E+09 1.E+10
NUMBER OF CYCLES

FIG.8

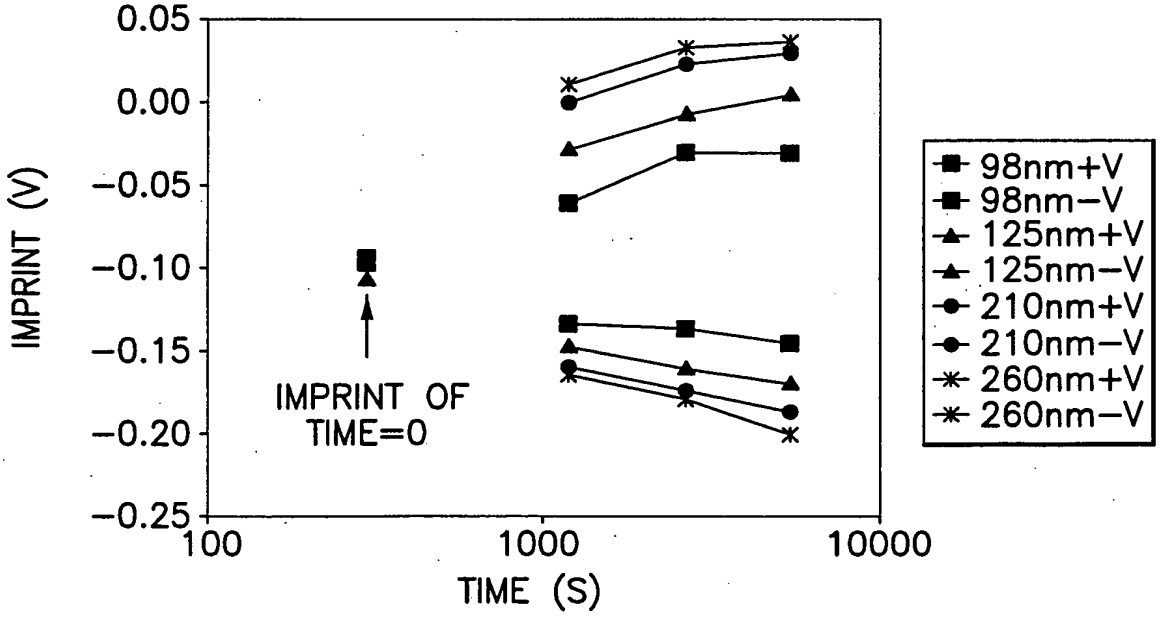
0.05
0.00
−0.05
−0.10
−0.15
−0.20
−0.25
IMPRINT (V)
IMPRINT OF
TIME=0
100
1000
10000
TIME (S)
98nm+V
98nm−V
125nm+V
125nm−V
210nm+V
210nm−V
260nm+V
260nm−V

FIG.9

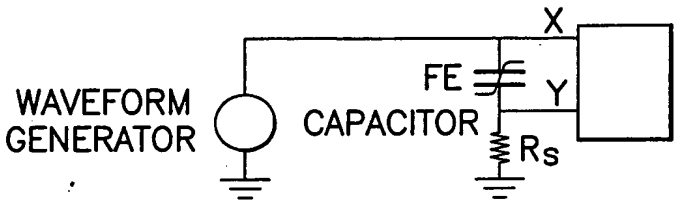
X
FE
Y
WAVEFORM
GENERATOR
CAPACITOR
Rs

FIG.10

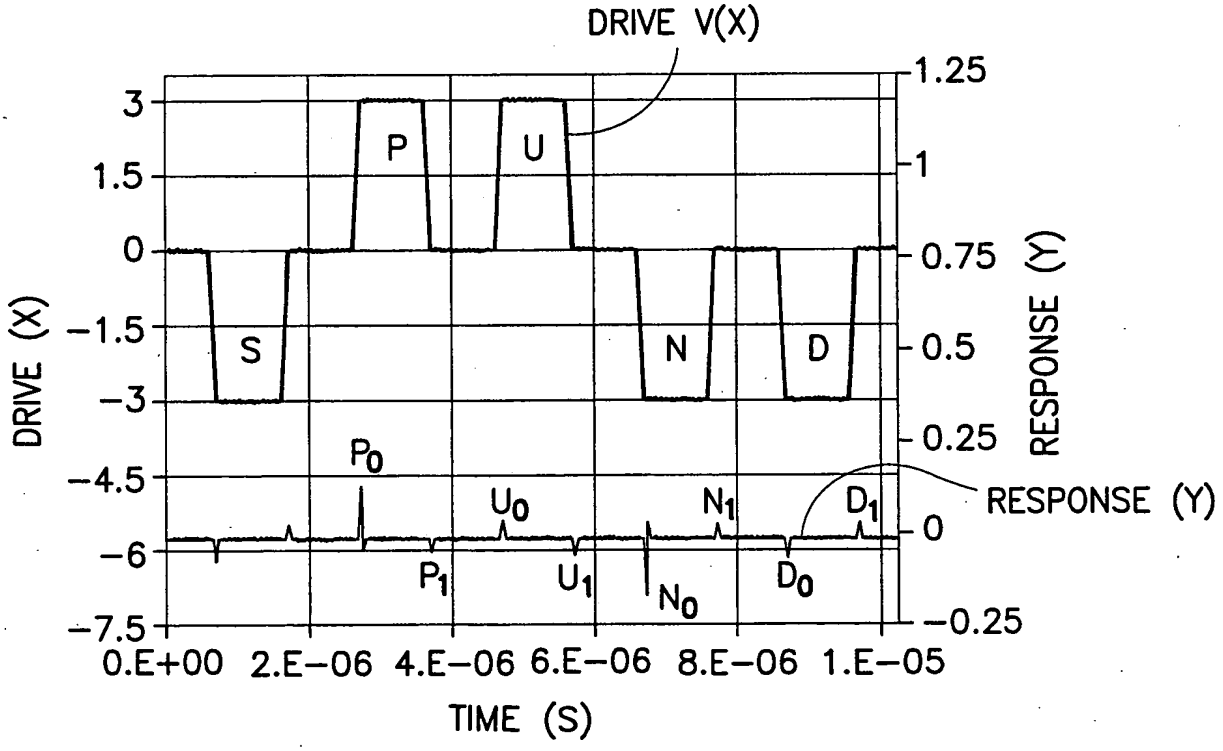
DRIVE V(X)
P
U
S
N
D
P0
U0
N1
D1
P1
U1
N0
D0
DRIVE (X)
RESPONSE (Y)
RESPONSE (Y)
3
1.5
0
-1.5
-3
-4.5
-6
-7.5
1.25
1
0.75
0.5
0.25
0
-0.25
0.E+00
2.E-06
4.E-06
6.E-06
8.E-06
1.E-05
TIME (S)

FIG.11

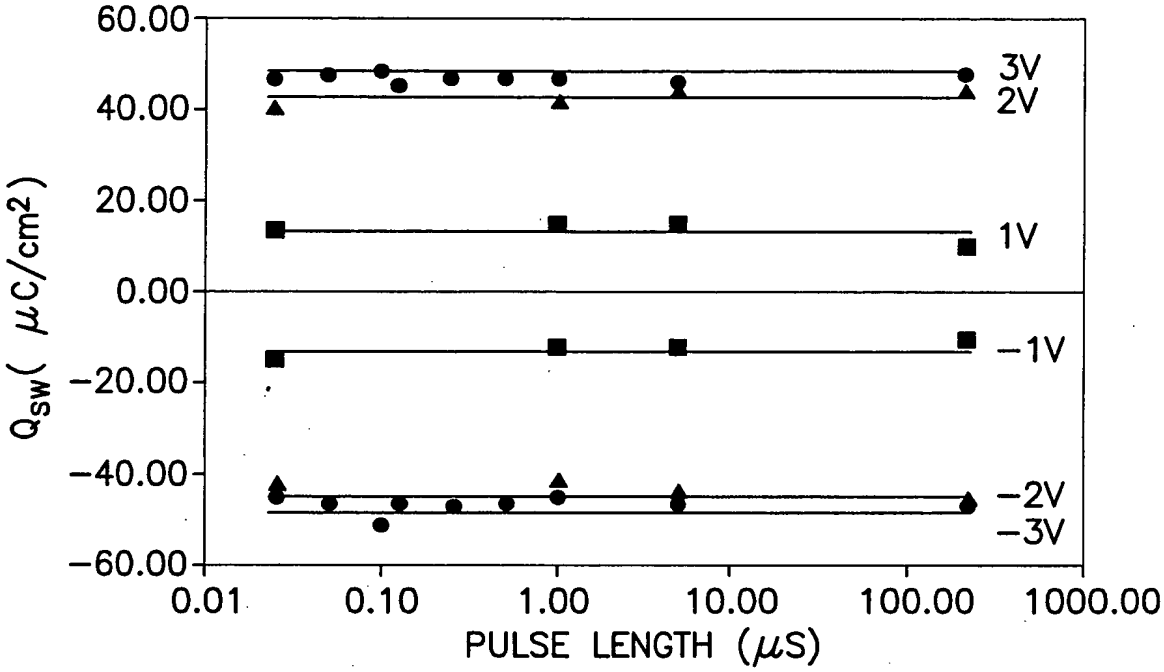
60.00
40.00
20.00
0.00
−20.00
−40.00
−60.00
Q_{SW}(μC/cm^2)
3V
2V
1V
−1V
−2V
−3V
0.01
0.10
1.00
10.00
100.00
1000.00
PULSE LENGTH (μS)

FIG.12

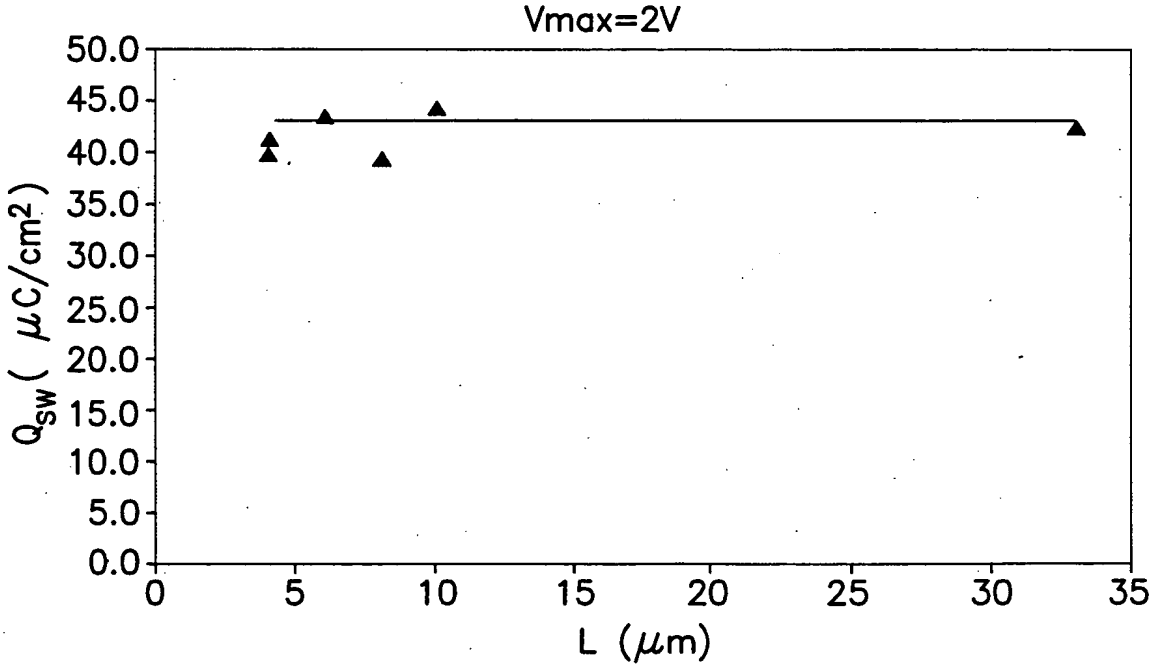
Vmax=2V
50.0
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
Q_{SW}(μC/cm^2)
0
5
10
15
20
25
30
35
L (μm)

FIG.13